

truths it brings into view; but they ought to be very important and striking ones, to entitle them to supersede those which led Cuvier to his system. To this I may add, that the new ichthyological classification does not seem to form, as we should expect that any great advance towards a natural system would form, a connected sequel to the past history of ichthyology;—a step to which anterior discoveries and improvements have led, and in which they are retained.

But notwithstanding these considerations, the method of M. Agassiz has probably very great advantages for his purpose; for in the case of fossil fish, the parts which are the basis of his system often remain, when even the skeleton is gone. And we may here again refer to a principle of the classificatory sciences which we cannot make too prominent;—all arrangements and nomenclatures are good, which enable us to assert general propositions. Tried by this test, we cannot fail to set a high value on the arrangement of M. Agassiz; for propositions of the most striking generality respecting fossil remains of fish, of which geologists before had never dreamt, are enunciated by means of his groups and names. Thus only the two first orders, the *Placoïdians* and *Ganoïdians*, existed before the commencement of the cretaceous formation: the third and fourth orders, the *Ctenoïdians* and *Cycloïdians*, which contain three-fourths of the eight thousand known species of living Fishes, appear for the first time in the cretaceous formation: and other geological relations of these orders, no less remarkable, have been ascertained by M. Agassiz.

But we have now, I trust, pursued these sciences of classification sufficiently far; and it is time for us to enter upon that higher domain of Physiology to which, as we have said, Zoology so irresistibly directs us.

[2nd Ed.] [I have retained the remarks which I ventured at first to make on the System of M. Agassiz; but I believe the opinion of the most philosophical ichthyologists to be that Cuvier's System was too exclusively based on the internal skeleton, as Agassiz's was on the external skeleton. In some degree both systems have been superseded, while all that was true in each has been retained. Mr. Owen, in his *Lectures on Vertebrata* (1846), takes Cuvierian characters from the endo-skeleton, Agassizian ones from the exo-skeleton, Linnæan ones from the ventral fins, Müllerian ones from the air-bladder, and combines them by the light of his own researches, with the view of forming a system more truly natural than any preceding one.

As I have said above, naturalists, in their progress towards a Natural